

AMENDMENTS TO THE SPECIFICATION

Please replace paragraph no. 133 with the following amended paragraph:

[133] (a) We use proof analysis techniques (described above) with BMC Search for generation of abstract models. Our use of BMC Search with Proof Analysis is shown in FIG. 5. Given a model and a safety property, we start at depth 1 (box 500). If we have not reached the maximum depth (boxes 501, 502) specified (k_{\max}), then we formulate the k-instance BMC problem (box 503). Next, we use the SAT solver with Proof Analysis on this problem (box 504). If the problem is satisfiable (~~box 503~~) (box 505), then a counterexample has been found (corresponding to the satisfying assignment of the SAT problem) and we terminate (box 506). However, if the problem is unsatisfiable, i.e. no counterexample of length k exists, then we save the set of reasons for the unsatisfiability, marked by the proof analysis technique, and associate this set with depth k (box 507). Next, we increment k (box 508). If we have reached the limit k_{\max} , we stop (box 510). At this point, we have k sets of reasons, one for each depth up to k. These reasons are used to extract abstract models, one for each depth up to k (box 509).